REPORT

ECONOMIC AND FINANCIAL ASSESSMENT OF PREMIUMS FOR THE ADOPTION OF RAINFOREST ALLIANCE CERTIFICATION SCHEME BY FARMERS IN THE BIA CONSERVATION AREA OF GHANA

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BACKGROUND

Across the globe, natural systems that support economies, lives and livelihoods are at risk of rapid degradation, with significant further loss of biodiversity becoming increasingly likely. Agriculture impacts biodiversity and in situations where a new production area is been prepared almost all the biodiversity on that particular piece of land is lost. It is estimated that agriculture production accounts for almost 65% of biodiversity worldwide and cocoa production in particular accounts for 80% of the removal of original forests. This coupled with other factors including population growth, urbanization, and environmental pressures.

The overall goal of the project is to mainstream biodiversity conservation into cocoa production landscape around the Bia Conservation Area in Southwest Ghana. Cocoa production is a major economic activity and land use in the Guinean Forests of the West Africa hotspot, one of the world's 25 biologically richest and most endangered terrestrial regions. Forest ecosystems here harbor more than half of all mammal species found in Africa. Cocoa farms constitute a threat to the region's globally significant biodiversity but also offer an opportunity to conserve it. The scale of the cocoa production sector and the global importance of the biodiversity in cocoa production landscapes justify the project intervention.

The Government of Ghana has recognized the threats to the cocoa industry and the present focus of the national cocoa policy is to increase production in existing plantations by introducing better agronomic practices and rehabilitating old farms. The commitment is also consistent with Ghana's National Biodiversity Strategy, which places a strong emphasis on conserving the remaining forest cover. With an average yield of only 250-300 kg/hectare in Ghanaian cocoa farms, there is a sizeable potential for increased per-area yields and reduce the need for cocoa expansion.

This project is addressing barriers to wide-scale sustainable cocoa production at three levels: the market level, the national level, and the local level. At the market level, it will work with cocoa traders to support farmer's efforts to adopt sustainable practices and increase their understanding of the relationship between biodiversity conservation and productivity. At the national level, the project will promote certification models that provide incentives for biodiversity-conserving and productive agroforestry farm systems. At the local level, it will collaborate with and support farmers to adopt best practices that enhance the ecological integrity of farms and connect forest fragment in the landscape while at the same time improving farm productivity.

The project presents an opportunity for biodiversity conservation with the adoption of an ecosystem approach by producers especially those farming at the fringes of forest reserves. The adoption of this approach leads to enhance environmental quality and natural resource base upon which the agricultural economy is based on. The effective application of best practices at the farm level will transform the landscape and will require the translation of knowledge into policies and practices that create synergies between different components of biodiversity and the provision of ecosystem services.

INTRODUCTION

1.1 Cocoa Production and the Ghanaian Economy

Ghana is the world's second largest producer of cocoa, responsible for producing around 20.7 per cent of the world's bulk cocoa in 20011-2012. Cocoa is Ghana's dominant cash crop and single most important export interest. With over 700,000 rural households, with around 6.3 million Ghanaians representing 30 percent of the total population, cocoa production becomes a major economic activity and source of livelihood for Ghanaians.

In 2006 alone, exports of cocoa and cocoa products totaled US$1,241 million, equivalent to more than 33% of Ghana's merchandise exports (WTO, 2008). Cocoa production and marketing accounted for 32.2 percent of export earnings (ISSER, 2007) and 8.5% of Gross Domestic Product (GDP) in 2006, up from 4.9% in 1998 with the European Community being the main export destination for cocoa produced in Ghana (IMF, 2007). Ghana's high quality cocoa and the good reputation of the COCOBOD allow it to sell up to 70 % of its cocoa on forward markets which allows it to hedge the price for the season. On the basis of this price, the COCOBOD's Producer Price Review Committee sets the producer price. This has helped to maintain the quality of Ghanaian bulk cocoa, which earns an international price premium of between 7 to 10% above the price paid for other West African bulk origins.

Ghana's cocoa production is characterized by small-scale farming with an average productive cocoa area per household of approximately 2 hectares. The average yield per hectare is less than 350kg (Conservation Alliance 2013), which is low compared to on-station research trials. In cocoa producing households it is estimated that the mean per capita daily income from cocoa was US$0.42 out of a total income of US$ 0.63 (Barrientos et al., 2008), thus indicating a relatively high level of poverty. If poverty amongst cocoa farmers is to be addressed, and good-quality cocoa produced on a sustainable basis over the long term, agricultural productivity and incomes need to rise. This is a systemic challenge, which faces all parties in the chain, particularly those in Ghana.

1.2 Demands for Certified Cocoa Beans

The demand for sustainable cocoa is also growing and expected to continue to grow over the next years. Major players in the supply chain have made commitments to increase the sustainability of the cocoa they purchase. As the current certified production of cocoa is close to 6% of the total cocoa production. This does not mean that all the total amount of certified cocoa has reached the final market. Issues related to double-certification, i.e. cocoa that has more than one certificate, and leakage to conventional channels, i.e. certified cocoa that is sold as non-certified in conventional markets, may impact the total certified cocoa available

It is foreseen that private sector players will have to increase their efforts to secure their sustainable supply in order to meet their commitments set. In that sense, we already see the establishment of partnerships between value-chain actors aiming on increasing the amount of certified cocoa produced.

1.3 Cocoa Certification in Ghana

Cocoa certification as tool provides largely some long-term solutions to the unsustainably means by which cocoa is been produced by facilitating the sustainable production of cocoa. It is therefore not an end by itself but certification is one of the available tools in the market to ensure the application of principles for sustainable production of commodities, like cocoa (KPMG 2012).

It comprises a set of principles addressing environmental, social and economic concerns, farmer group formation and community wellbeing. Within their scope the different certification schemes[1] vary in their main focus or approach and emphasis for achieving a more sustainable cocoa production with some of them focusing on the creation of sustainable trade relations (e.g. Fairtrade), another emphasizing on the environment (e.g. Rainforest Alliance) and others with a greater focus on increasing farmer productivity as a way to strengthen farmers (e.g. UTZ Certified). It can be said that overall they seek improvements in farmers' livelihoods, focus on developing good production practices and on building local capacity.

Certification pays systematic attention various aspects of production including variety and choice, cultivation patterns and fertilizer and pesticide inputs to improve land productivity, and some forms of mechanization (use of modern pruners, tractors to carry pods, etc.) to increase

[1] Fairtrade, Rainforest Alliance, UTZ Certified and Organic Certification Schemes

labor productivity on a sustained basis. Certification prepares the ground for farmers to access to finance and credit, hybrid seeds and seedlings, information on fertilizers, an adequate spraying program, and provision of extension services.

Market access can also be facilitated through better transportation, improved communication, and improved information flows. This is a particular problem for farmers in smaller or more remote locations remote locations.

METHODS AND DATA

2.1 Scope

2.1.1 Study Area

The scope of this assessment will be the reach of the cocoa project being implemented by Conservation Alliance with support from BACP. This area falls within the Bia District which was carved out of the former Juaboso-Bia District of the Western Region of Ghana which by a Legislative Instrument (LI) in 2004 carved out 2 districts- Bia and Juaboso Districts. It is one of the thirteen districts in the Western Region and is located between Latitude 6°6'N and 7°0'N and Longitude 2°40'W and 3°15'W.

The Bia district shares boundaries with the Dormaa District to the north, Asunafo North District to the east, La Cote d'Ivoire to the west, and Juaboso District to the south. The district capital, Essam-Debiso is located 420 km to the northwest of Sekondi-Takoradi (the Regional Capital) and 250km to Kumasi, the nearest commercial center. The district has a surface area of 2,185.3 sq. km thus making it the seventh largest district in the Western Region of Ghana.

2.1.2 Socio-economic Environment

Conservation of biodiversity in places where lands is becoming increasingly scarce and where agriculture is the main economic activity requires livelihood diversification to broaden the economic base of the local people. Viable livelihood diversification activities may include improvement in the existing livelihood strategies to reduce the size of land needed for the economic enterprises and also to stay on a piece of land for a long time while at the same time limiting the use of fertilizers and pesticides.

Communities in the area generate income basically from agricultural activities (59%) employing about 64% of the people living in the district. Even though these farmers cultivate a number of crops including food and cash crops, most of these farmers are basically cocoa farmers. This reveals the importance of cocoa farming to the livelihood of the communities living there.

Other sectors of forest enterprises including agro-processing and agro-forest enterprises has a bigger potential but is not been explored due to lack of capacity and collaboration, empowerment and markets for the finished products.

2.2 The Rainforest Alliance Certification Process

2.2.1 Overview

The Rainforest Alliance (RA), a coalition of independent non-profit conservation organizations in Latin America, promotes social and environmental sustainability of agricultural activities through the development of standards (Divney, 2007; SAN, 2008). Its mission is to protect ecosystems and the people and the wildlife that depend on them by transforming land-use practices, business practices and consumer behavior (Ventura, 2007; Rainforest Alliance, 2005).

The RA works to implement global standards at the field level for sustainable management practices; to monitor and evaluate progress and compliance through on-site investigation and certification; and build market demand for sustainability-produced products. Rainforest Alliance follows the Sustainable Agriculture Network (SAN) standards, an independent certification body and issues it's farmers with the Rainforest Alliance certification seal. The first certification in Africa was in early 2006.

Producers wishing to become RA certified are required to implement good agricultural practices in accordance with the standards of the SAN. In the Western Region of Ghana where most of the cocoa is grown either with no shade or very little shade (<20 shade trees per ha) this would entail, among other things, planting compatible indigenous tree species in these full sun and light shade systems to increase biodiversity and other environmental services (the current proposed SAN shade standard is 70 shade trees per ha distributed over a minimum of 12 species).

Producer benefits will depend *inter alia* on: 1) the extent to which consumers are willing to pay premiums for quality and process attributes; 2) the efficiency of market actors in adapting to the demands of differentiated markets; and 3) the productivity of the proposed system. The development of RA production systems will require new institutional mechanisms for cultivation the shade trees and other requirements needed to meet the RA-SAN environmental standard.

There are also knowledge gaps in the farming population concerning FF and RA-SAN cultivation practices that would likely require some investment in extension. The returns to such institutional investments will depend on the added value to the economy from the adoption and spread of the RA-SAN certified production system. If farmers do not earn positive returns with the system there is no reason to further invest in seed distribution systems or farmer training. As such, assessing the farm-gate profitability of the system is the prime focus of the proposed analysis.

2.2.2 Economics of the RA Certification Scheme

Cocoa plays a very important economic role for smallholder farmers. As a cash crop it can provide necessary income for the purchasing of food, shelter, clothing and other financial obligations. Cocoa production contributes to the majority of the income that comes to a household. Furthermore, species inter-cropped with cocoa tend to be medicinal, timber, edible, or fertilizer trees with the potential to increase farmer revenue (Conservation Alliance 2010).

Cocoa farmers may experience some economic (as well as ecological) benefits from using shade in their production. For example, shade trees may attract birds into cocoa fields which may aid in insect control, although the possibility of crop damage exists with increasing bird populations (Greenberg et al. 2000).Smallholder farming strategies appear to vary locally and may not be driven strictly by economic considerations. Rainforest Alliance has specific requirements for farmers to maintain existing shade trees or plant new ones. Farmers need to have plans in place to reduce their carbon emissions or increase carbon sequestration and they are also required to annually describe their energy use per source and have a plan for energy efficiency.

It is anticipated that the adoption of RAC principles and guidelines generally leads to increase in productivity of farms (COSA 2008) and also conservation of natural resources. This increase the amount of the money available to farmers enabling them to increase their production or upgrading their social status. There is no fixed premium price for RAC cocoa. Premiums are paid based on the prevailing market price. In Ghana premiums hover around $150.tonne. There are no specific guidelines with respect to how premiums are distributed amongst the stakeholders (coop and individual farmers). However there are various models that are in existence now in Ghana depending on the certification strategy (LBC led, NGO led, Farmer Coop led, or a combination of any of the mentioned).

2.3 Data

Secondary data were essentially obtained from published literature, production, CA databases, annual reports of the Cocoa Research Institute of Ghana (CRIG) and from various online databases. Secondary data from various sources was augmented with primary data from Conservation Alliance field data collection programs with its collaborators. This purposive and expert data were collected on inputs in the production of cocoa and outputs from sales of beans

and other farm produce. Some of the input parameters includes cost of agro-inputs, labor, supplies, etc.

Estimates of timber and other forest products were done with standard rates and guidelines from the Forestry Commission of Ghana. The value of these products are projected over the long term and quantified for the purposes of this study.

2.4 Methods

In order to understand the market potential for differentiated (certified) cocoa estimates of the returns to typical cocoa production systems in the Bia Conservation Area. Farms within the area have low-medium shade in different spatial arrangements. Perennial crops like cocoa generate a stream of costs and benefits over a given time period.

Various models been implemented by LBCs and NGOs and various mechanisms designed to distribute premiums to farmers. These mechanisms are influenced by the general aims of the certification scheme. For those that have the aim of building the farmer Coop, a large chunk of the cash goes into building the capacity of the farmers and seeing to the day to day management of the Coop.

Various literature (peer-reviewed academic papers, project reports, policy can be found on the economics of certification under various schemes but very little exist on the optimal premiums that needs to be paid to farmers to motivate them to adopt best practices. Economic and financial assessment methodologies exists in sparse publications and these are usually done at a very large scale.

For the purposes of this assessment, an integrated approach using the modified version of the KPMG model (KPMG 2012) and the methodology employed by Franzen and Mulder (2007). Various levels of assessment were carried out including landscape, community and farm level.

The concept of Net Present Value (NPV) and the Benefit Cost Ratio (BCR) were used to evaluate the economic returns to farmers certified under the RAC system in the Bia Conservation Area. Various factors including the age of farm and farmer, access to training and technology,

etc. were linked to the costs and benefits a farmer derives from this system. Due to the time value of money, future cost and benefit values were discounted to enable comparison with present values. This leads to the concept of discounting and compounding.

2.5 Assumptions and Limitations

Data from which conclusions were drawn for the purposes of this study were drawn from secondary sources and complimented by primary purposive and expert interview conducted in the project area.

No differentiation or intentional comparison of individual certification schemes is been done, which means that the arguments presented might not be equally applicable to all schemes, given their different requirements.

RESULTS

3.1 Description of Production Systems in the Bia Conservation Area

A medium shade high input technology conforming to RA-SAN standards is compared with a low input Amelonado production technology typical of most Ghanaian bulk cocoa. Crops used by farmers as temporary shade at the early stages of cocoa establishment commonly include plantain among other crops. Plantain intercropped by cocoa farmers during the first two years of the establishment phase of their farm had an assumed yield of 2,500 kg per ha in year 1 and 2 of the production cycle for all systems analyzed.

3.2 Farm Budgets and Returns

To be able to get a baseline situation on cocoa farms in the Bia Conservation Area, estimates of prevailing input prices gathered from local markets from January-August 2013. The farm gate price of bulk Ghanaian cocoa is assumed to equal 70% of the mean FOB price.

A premium of $150/Mt (typically paid for RA Certified beans) is the normal situation in most RAC schemes in Ghana. Various percentages are charged to this premium by COCOBOD, CMC and the LBC which leaves about $84.00/Mt to be shared in a ratio of 2:3 between the farmer and the Coop. The share (40%) that goes to the Coop is used to maintain the certificate and running of the association. Thus an equivalent of $50.40 per ton is added to the producer price for good fermented Ghanaian certified cocoa. Fertilizers are sold to farmers at a subsidized price of GHS 57.00 per 50 kg bag.

3.2.1 Labor Costs

Even though the RAC System sets out requirements for labor standards on producer farms, it does not set out minimum wages that are due laborers. It is rather preferred to be set to the standard of national or international laws (whichever is stricter).

The size of a farm is influenced by the age of the farmer because these farmers generally depend on their own strength and sometimes the help of family members and help groups. Labor costs are calculated based on time spent to comply with certification requirements.

3.2.2 Cost of Building Producer Capacity

Farmers are trained using the modified version of the Farmer Field School[2] (FFS) model developed by the STCP Program. As part of this process, knowledgeable and well-motivated farmers are selected from each community and enrolled into a school, which usually lasts for 3 months (weekly meetings). Sessions are both classroom and field-based. Usually 2 farmers are selected and enrolled from each participating community into the school. Various topics are discussed including agronomy, ICPM, Quality issues, Biodiversity, Financial Literacy and Social issues.

There are also special and seasonal training sessions for the farmer leadership which includes the executive council[3] and communal leadership on management issues, daily administration of the group and financial literacy programs.

Training is organized by the farmers' local office with resources (both financial and technical) from Conservation Alliance and its collaborators.

3.2.3 Logistics to Comply with Standard

In order that farmers comply with the requirements of the SAN Standard, there are some investments that are made in infrastructure and allied costs. Some of these cost include personal protective equipment (PPE), shade trees, agro-chemical, notebook and pen for documentation, etc. Other cost include the cost of reaching out to other farmers as part of making sure that other farmers within the association are able to comply with the standard.

3.2.4 Cost of Management System

The model been employed here assumes the formation of a farmer coop that takes charge of the daily running of the association with a combination of farmers and specially hired local staff to manage the Internal Management System (IMS) for certification. Only the specially hired local staff (including the IMS Manager and Documentation Officer) are paid staff. All other staff of the IMS are paid allowance to take care of transportation and medical expense incurred in the line of duty.

[2] Details of Methodology can be found at www.iita.com.
[3] Executive Council is made of the President, Vice, Secretary, Financial Secretary, PR and Women's Rep

The IMS is housed in a local rented office with basic equipment (including a desktop computer for data entry, writing desks and chair, shelves and stationery) to enable them run the office. In this case the IMS Manager and the Documentation Officer are both provided with a motorbike to enable easy movement with the project area.

These administrative costs are incurred at the Coop level and it's a fixed cost for the group formation and it is not recurring.

3.2.5 Audit Fees

The cost of conducting a RAC audit depends on a number of factors. Some may be fixed whilst other may vary according to some factors including the size of the coop, traveling distance, whether the audit team is sourced from outside or locally, etc. Those that are fixed include administrative charges and fees paid to RA.

For the group of farmers in the Bia Conservation Area (under this project), an estimate of $6,500 will be required to audit them (Annual Audit).

3.3 Cost Benefit Analysis

This analysis assumes present cost-benefits accruing in 3 years which represents a complete cycle under the Rainforest alliance Certification scheme.

This analysis shows that farmers benefit (BCR=1.09, IRR=3.88) more from certification as a result of increase in yield which increases steadily within 3 years to up to 25% of the initial yield. This benefit also has a cost implication which is in the form of labor and agro-inputs. When productivity improvement and input costs are balanced against labor and agro-input costs there is a net benefit of $38/ton of produced cocoa over the years.

From the analysis presented here, a business case can be presented for a typical farmer. This has been made possible by a number of factors including the subsidized cost of inputs currently been facilitated by the government of Ghana through COCOBOD.

There may be deviations with respect to the real situation that exists in the project area. One peculiar case is the leakage of beans into the conventional stream of beans and also when farmers own smaller parcels of farm which is the case in the project area. Whilst these issues are not tackled by schemes, these issues are not part of the issues that the government and its regulatory agencies are tackling because certification is not mainstream in any government policy.

The benefit of farmers is also positive because the sum of the benefits by the entire Coop when sum up is larger than their aggregated cost. This means for a larger farmer coop there benefits accrued is larger but that will also mean a higher initial cost (e.g. IMS infrastructure, training cost, etc.).

3.4. Optimizing Certification Benefits

Analysis presented above indicates that certification is a positive force towards developing a sustainable production chain for cocoa in the project area and Ghana as a whole. Notwithstanding these benefits, farmer stand a better chance of benefiting more if certification costs are lower and productivity is increased. This safeguards, the farmers' investment and also enhances their livelihood.

To maximize total benefits from certification against the lowest total costs, investments could for instance focus on the incremental (marginal) farmer entering the population of certified farmers as they require the least investments to achieve certification requirements. This will mean that the farmer would have moved from a lower productivity bracket to a mid-higher bracket and would have enjoyed increased productivity as a result of adopting best practices on the farm. This scenario will be better understood when enough data is collected under a number of production system models over time.

3.5 Optimized premium for Increased Productivity

The distribution of premium is an avenue to motivate farmers to adopt best practices. From the results of analysis of field data collected, it resulted as an important benefit to farmers and their coops.

Premiums are an additional source of income for smallholder farmers as a result of extra costs in terms of labor and input and these must be accrued in the long term. The present premium been paid does not motivate farmers to adhere to certification practices but as stated earlier, this adherence is stimulated by the increased productivity bracket that is experienced by the farmer. The current level of premiums been paid would not have been able to drive the process of certification.

This is further enhanced when certain charges and fees are not deducted from the premium but is channeled into building the coop and assisting the farmer recoup certain costs incurred during the adoption process. At this rate it is suggested that an increase of 50% of the current premium been paid to farmers be added as compensation for the additional labor which in most cases becomes the “sweat equity” the farmer uses to comply with certification standards.

CONCLUSIONS

4.1 Conclusions

Ghana has set a rather ambitious target of producing 1 million tons of cocoa by 2012 which was not reached. Certification presents a positive force towards assisting the nation reach this set target in the coming years. As land becomes scarce, there are chances that new planting may occur in protected areas. Certification puts smallholders in check not to venture into these areas by introducing innovations that ultimately increases productivity.

Yield improvement is important to the sustenance of the cocoa production chain and farmer livelihood. Analyses have shown that certification can be beneficial to farmers if certain conditions are met. These benefits are larger at the farmer/Coop level and it increases as the size of the Coop increases and the average farm size also increases.

Even though yield are generally low in cocoa growing areas in Ghana, places that have experienced certification projects have reported increased productivity. Even though this increase can be attributed to a number of reasons, it is obvious that farmers who have had previous experiences in projects that built the capacity of farmers in best practices stand the chance to climb faster and higher the productivity potential ladder than those who have not had any previous experience. In such in instance, certification is seen as a "top up" and not an entirely new initiative. When this scenario is created then premiums also become a "top up" to the increased in productivity the farmer is already experiencing.

It is important to also note that there are other benefits that were not quantified as part of this study. These include intangible environmental services that the farmer derives from the ecosystem, enabling environment, etc. It is expected that future studies will incorporate these other parameters to ascertain the full dimension of benefits/loses as result of certification.

An important assumption used in drawing the conclusions of this study is the government input subsidy scheme that is currently been run by CODAPEC[4] of COCOBOD. Under this scheme government undertook mass spraying of cocoa farms against the swollen shoot virus and capsid diseases. This scheme together with a subsidized fertilizer distribution scheme assisted farmers to cut down production cost. This initiative put cocoa farmers in Ghana at an advantage ahead of

[4] http://www.cocobod.gh/cocoa_swollen.php

their counterparts in neighboring West African states. The sustenance of these schemes will ensure the viability and profitability of certification in Ghana.

4.2 Recommendations

Based on analyses presented above, it is recommended that:

1. Certification schemes should include all stakeholders at various levels. These stakeholders will include government and their agencies, private sector and the local communities as a whole.

2. The payment of premium should be seen as an additionally and not the main objective of adopting certification practices.

3. Majority of premium should get to the farmer as an additional means of motivation to adopt practices and also to enhance livelihood of the farmer and society in a whole.

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